

Running head: USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL  
MORTALITY

USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

A CREATIVE PROJECT

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### **Introduction**

Women in the United States are dying of pregnancy-related complications more than women in any other developed country in the world (Martin & Montagne, 2017). The United States is the only developed country whose maternal mortality ratio that has continued to rise over the last 20 years (Martin & Montagne, 2017). Maternal death is defined by the World Health Organization as “the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes (WHO, 2011, p. 165).” The maternal mortality ratio is defined as the number of maternal deaths during a given time period per 100,000 live births during the same time period (Patwardhan et al., 2016). Women of all races are affected by this issue, but Black women in the U.S. are the demographic most at risk. Black women in the United State are three to four times as likely to die from pregnancy-related causes as their white counterparts (“Pregnancy mortality surveillance system”). This statistic is consistent even when income and education level are equivalent, pointing to disparities in care given to Black women (Agrawal, 2014).

Many interrelated factors contribute to the embarrassingly high maternal mortality rate in the U.S. According to Elmusharaf, Byrne, & O'Donovan (2015), the main reasons for maternal deaths within the health system are the lack of skilled birth attendants, remoteness, delay in referral for emergency obstetric care, delay or poor implementation of interventions at the facility level, and vertical delivery of care in which single elements of care are implemented without connection with the comprehensive care (p. 2). Furthermore, a New York Times article suggests institutional and structural racism is to blame as it bears on the lives of Black women to

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

the point of negatively affecting their pregnancies and the care they receive (Villarosa, 2018).

While Black women cannot control factors like racism or hospital policy, one step in combating this national issue is to improve access to resources and tools that educate women of their risk factors for maternal mortality. Simply knowing the risk factors and where to get help if needed, may strengthen Black women's capabilities in advocating for themselves in situations related to their health and their pregnancy (Elmusharaf, Byrne, & O'Donovan, 2015).

Currently there are websites, articles, books, and blogs dedicated to sharing important, relevant information about maternal mortality and other pregnancy related topics. Major news and media outlets like CNN and NPR have published special series' on their websites about maternal mortality, establishing it as a matter of grave concern in the United States ("Lost Mothers"; "Giving Birth in America"). However, there are still very few digital resources tailored to Black women in specific geographic regions that give detailed statistics and explanations about their pregnancy risks. Creating a digital resource that makes pregnancy information specific to Black women more accessible and pervasive in the Black community is an opportunity to give Black women access to accurate, realistic information so they can make the best decisions about their health.

Research by Nielsen (2018) shows that African-American consumers are leaders in household device ownership. They possess more digitally driven devices like smartphones, tablets, gaming consoles, wireless headphones, smart TVs, smartwatches, smart speakers, internet-to-TV streaming devices and virtual-reality devices than non-Hispanic Whites and the total population (p. 13). Nielson's (2018) research also shows that more than 50% of the African-American population have lived their entire lives in the digital age (p. 8). These trends

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

show Black people are no strangers to using digital channels of communication. According to the Pew Research Center, African-American women are much more likely to have sought health information, job information, and religious information online, compared to African-American men (Spooner, 2000). The familiarity Black women have with digital communication and information seeking makes creating a digital resource for an issue so close to them an appropriate task.

The geographic region this study is dedicated to presenting a resource for is the state of Indiana. In Indiana, 53 Black Hoosier moms die for every 100,000 live births, a ratio more than twice the national average of 20.7 deaths for every 100,000 live births (“America’s Health Ratings”, 2018). In September of 2018 Fox59, a local Indianapolis News Outlet, reported that Indiana ranks #3 in the country for maternal mortality rates (Reinke, 2018). This shows that maternal mortality in the state is a serious issue and needs to be addressed in ways that are helpful to the populations affected by it. Creating a resource that is tailored to the needs of a specific community, Black women in Indiana, rather than a general audience can make the information it shares directly relate to their unique health experiences. It can allow women to make connections within their communities with organizations or people that may be helpful to them, something that is less feasible with a resource dedicated to a national audience (Elmusharaf, Byrne, & O'Donovan, 2015).

### Research Goal

The goal of this creative study is to design a culturally relevant digital resource for Black women in the state of Indiana. The resource will primarily discuss maternal mortality and its

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

implications for Black women. To accomplish this goal, this research aims to accomplish the following objectives:

**Objective 1.** To investigate the needs and desires of Black women in Indiana for information regarding maternal mortality and pregnancy risks.

**Objective 2.** To explore where Black women seek and receive health knowledge of pregnancy and/or maternal mortality risks they face and where they receive that information.

**Objective 3.** To understand Black women's awareness of their heightened risk of maternal mortality and to share important information with them regarding these risks.

**Objective 4.** To use information gathered on Black women's attitudes, beliefs, and needs to design a resource that effectively provides information (regarding maternal mortality, pregnancy risk, and other pregnancy related topics) in a culturally relevant manner.

To fulfill these objectives, this study aims to answer the following research questions:

**Question 1.** What information is lacking from current health resources that discuss pregnancy and Black women's maternal health?

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

**Question 2.** Where do Black women in Indiana find the most helpful health information regarding maternal mortality and pregnancy risks?

**Questions 3.** Are women cognizant of how their life experiences can affect their current and future health?

**Question 4.** Are there unique characteristics that need to be included in messages designed to communicate health risks to Black women?

The questions and objectives posed in this study will be addressed through using the Design Thinking framework as a research method. Design thinking, is a “human-centered approach to innovation that integrates the needs of people, the possibilities of technology, and the requirements for a organizational success” (IDEO U, 2018). Design thinking helps guide research in five steps: empathy, define, ideate, prototype, and test. The main focus of design thinking is understanding the people for whom you are designing before all else and allowing that understanding to lead in the creation of a product, service, or experience (Plattner, 2017). For this creative study to yield useful and relevant research results, its design will rely heavily on communication with the target audience through surveys, focus groups, and participatory design. Because design thinking is human-centered and user-focused, it will allow the audience’s beliefs, concerns, and emotions to play a role in informing the design of the educational resource along with peer-reviewed articles and statistical data. Design thinking involves audience communication with researchers through many different user-centered research methods (e.g.

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

focus groups, saturate and group sessions, surveys) and allows the specificities of the demographic population, region, and individuals to inform the design of what is being created. In this creative study, design thinking also allows for flexibility in design as new patterns and themes emerge from the research.

The following article contains a detailed literature review, project design and method, results, and discussion that illustrate the entire body of this study. In sum, this study will provide insight into how Black women best receive health information that is important to them. It can also provide insight into how health risks can be communicated in ways that are informative and relevant in their communities.

### **Literature Review**

#### Risk Communication

Public Health plays an essential role in society. Public Health is “the science and art of preventing disease, prolonging life, and promoting health through the organized efforts and informed choices of society, organizations, public and private communities, and individuals (“Introduction to public health”).” In the United States, Public health as a field of research and practice is dedicated to serving people and improving their health throughout their lifespan. Preventing disease, prolonging life, and promoting health involves a range of efforts that include the sharing of health news, risk factors to disease or illness, health statistics, and health advice through many channels of communication. While there are many public health communication types, risk communication is imperative in helping audiences understand how their choices and behaviors can influence their health. Risk communication has been of utmost importance in public health emergencies and in prior years was viewed primarily as the dissemination of

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

information to the public about health risks and events, such as outbreaks of disease and instructions on how to alter behavior in aims to reduce those risks (Gamhewage, 2014). Even though the communications of risks has always occurred between people and institutions, the field of risk communication is relatively new with heightened interest in risk communication beginning in the 1970s and 1980s (Qui, Rutherford, Chu, Mao & Hou, 2016, p.3). The risk communication field has gained greater interest and attention among agencies, policymakers, the media, and the public since the first American national conference on risk communication in 1986 (p.3). Advancements in media technology and communication technology have pushed risk communication to no longer be limited to the dissemination of health information during emergencies.

Risk communication today is recognized as “the two-way and multi-directional communications and engagement with affected populations so that they can take informed decisions to protect themselves and their loved ones (Gamhewage, 2014, p. 1).” The American National Research Council shares a similar definition of risk communication that emphasizes culture and personal beliefs as contributors to risk communication processes, explaining the following:

“Risk communication is an interactive process of exchange of information and opinion among individuals, groups and institutions. It involves multiple messages about the nature of risk and other messages, not strictly about risk, that express concerns, opinions, or reactions to risk messages or to legal and institutional arrangements for risk management (Qui, Rutherford, Chu, Mao & Hou 2016, p.3).”



## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

The World Health Organization acknowledges that risk communication requires a sound understanding of people's perceptions, concerns and beliefs as well as their knowledge and practices. It also requires the early identification and management of rumours, misinformation and other challenges ("General information on risk communication"). Risk communication uses many communications channels including social media communications, mass communications and community engagement ("General information on risk communication"). Smoking tobacco is one example of a national health issue that has been a top priority in public health risk communication efforts.

Leiss (n.d.) states that in many parts of the world tobacco use is "the single greatest risk factor in population health and likewise the leading cause of preventable mortality and morbidity, and yet we probably have more reliable and extensive scientific knowledge about tobacco use risk than we do for any other human health risk factor (p. 3)." The plethora of scientific knowledge coupled with U.S. health organizations' dedication to research and understanding tobacco use has helped further risk communication on this topic. Some studies that have contributed to interventions and smoking tobacco messages have addressed the health consequences of smoking, best practices for tobacco control programs, communicating risks to smokers, the influence of health literacy and smoking message content, influencing smoke cessation for pregnant women and more (Hoover et al.; Lee, J. G., Blosnich, J. R., & Melvin, C. L, 2012; Hammond, D., Fong, G., Borland, R., Cummings, K., McNeill, A., & Driezen, P., 2007; "The health consequences of smoking," 2014). This research has helped to inform interventions and anti-smoking messages all over the country. Risk communication campaigns for tobacco control in the form of warning labels on cigarettes, cigarette advertising banned on TV and radio,

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

graphic public service announcements, and the passing anti-smoking laws have contributed significantly to decrease smoking rates (Kounang, 2014). In the 50 years since the 1964 Surgeon General's report, *Smoking and Health*, US adult smoking rates have fallen from about 43 percent to less than 20 percent, saving millions of lives (Gupta, 2014; Dennis 2015).

As tackling smoking and tobacco use remains an important focus for public health organizations in the U.S., one health issue that has received national attention in recent years is maternal mortality. While this issue isn't new, conversations about maternal mortality have become not only popular, but extremely necessary in the U.S. as the maternal mortality rates continue to rise. These conversations have encouraged a deeper analysis of the risks women face throughout their pregnancies for health complications and death.

### Maternal Mortality and Women's Risks Factors

American women today are 50% more likely to die in childbirth than their mothers (Shah, N., 2018). In 2018 the Report From Nine Maternal Mortality Review Committees, written by health professionals from nine different U.S. states, reviewed data associated with pregnancy-related death and provided analyzable recommendations to prevent future maternal deaths. In their report, they identified seven leading underlying causes of pregnancy-related death, accounting for the majority of all pregnancy-related deaths in the United States. These causes are hemorrhage (14%), cardiovascular and coronary conditions (14%), infection (10.7%), cardiomyopathy (10.7%), embolism (8.4%), preeclampsia and eclampsia (7.4%), and mental health conditions (7.0%). There are many individual health risk factors that can lead to these dangerous complications such as pre-existing conditions, high blood pressure, obesity, advanced

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

gestational age, prolonged labor, and history of pregnancy complications (“National Institute of Child Health and Human Development,” n.d.; Dresang, Fontaine, Leeman & King, 2008; Anderson & Etches, 2007). Access to quality education, health services, income, insurance, and social support are all social determinants of health that also impact the care women receive and their maternal outcomes (Martin & Montagne, “Nothing protects black women,” 2017).

There is a significant disparity in the maternal mortality ratios between Black and White women in the United States. In 2018, the maternal mortality ratio for Black women was 47.2 deaths per 100,000 live births, a ratio that is more than twice the national average and three to four times higher than their white counterparts (“Pregnancy mortality surveillance system”; 2018 Health of Women and Children Report). *A Black Women’s Maternal Health Brief* published by the National Partnership for Women and Families explains that social determinants of health like access to health care services, residential segregation, and social support can all impact Black women’s birth outcomes. Black women are more likely to be uninsured, face greater financial barriers to care when they need it and are less likely to access prenatal care (National Partnership for Women & Families). Additionally, seventy-five percent of Black women give birth at hospitals that serve predominantly Black populations and these Black-serving hospitals tend to have higher rates of maternal complications than other hospitals (National Partnership for Women & Families). These social determinants of health are valid in their attempts to explain the difference in maternal mortality rates between Black women and women of other races in the U.S. However, they do not explain why Black women who are highly educated and have access to sufficient health and prenatal care still see significantly worse outcomes than women of other races with similar education and economic advantages (Martin & Montagne, 2017). An article

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

published at the Center for American Progress (Novoa & Taylor, 2018) notes that numerous studies show even after controlling for education and socioeconomic status, African American women remain at higher risk for maternal and infant mortality (p.4). One example is the research study conducted by Harper et al. (2004) aimed to determine if socioeconomic and medical risk factors explain the racial disparity in pregnancy-related death. The results of the study showed that after controlling for income, gestational age, and maternal age and health status, the odds of dying from pregnancy or delivery complications were almost three times higher for African American women than they were for non-Hispanic white women (Harper, Espeland, Dugan, Meyer, Lane & Williams, 2004). Studies like these show that risk factors alone cannot fully explain African Americans' higher maternal mortality (Novoa & Taylor, 2018).

Many researchers and health professionals have begun accepting the notion that for Black women in America, an inescapable atmosphere of societal and systemic racism can create a kind of toxic physiological stress, resulting in conditions like hypertension and pre-eclampsia, that lead directly to higher rates of infant and maternal death (Villaroso, 2018). To account for early health deterioration among Blacks, Dr. Arline Geronimus proposed the “weathering” hypothesis. This hypothesis, as explained by Thorpe et al. (2016), states that the health status of African American adults begins to deteriorate prematurely compared to other American ethnic groups as a consequence of long-term exposure to social and environmental risk factors (p. 809). On a physiological level, persistent, high-effort coping with acute and chronic stressors can have a profound effect on health (Geronimus, Hicken, Keene & Bound, 2006). Martin and Montagne (2017) recognize that stress experienced due to racism is “a type of stress from which education and class provide no protection (para. 23). The effects of racism also extend beyond the

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

individual repercussions and impact the care women receive and the relationships they have with the health care system entirely.

Dr. Indy Lane, an obstetrician-gynecologist for Community Health Network based in Indianapolis, believes that “culturally, Black communities, and Hispanic communities too, have a distrust of the health care system. There are lots of abuses that have happened not that far in the distant past that have impacted how we view health care, traditional health care (Bavis, 2018).” Martin and Montagne (2017) in their article *Nothing Protects Black Women From Dying in Pregnancy and Childbirth*, explain that in hundreds of stories of African-American mothers that ProPublica and NPR have collected to support their series “Lost Mothers”, the feeling of being devalued and disrespected by medical providers is a common experience for Black women. Again, education and class do not provide protection from this experience. Tennis star Serena Williams shared her own story of being devalued by medical providers during the birth of her first child. The New York Times article, *Why America’s Black Mothers and Babies in a Life-or-Death Crisis* summarized her experience:

“The day after delivering her daughter, Alexis Olympia, via C-section in September, Williams experienced a pulmonary embolism, the sudden blockage of an artery in the lung by a blood clot. Though she had a history of this disorder and was gasping for breath, she says medical personnel initially ignored her concerns. Though Williams should have been able to count on the most attentive health care in the world, her medical team seems to have been unprepared to monitor her for complications after her cesarean, including blood clots, one of the most common side effects of C-sections. Even after she received treatment, her problems continued; coughing, triggered by the embolism, caused

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

her C-section wound to rupture. When she returned to surgery, physicians discovered a large hematoma, or collection of blood, in her abdomen, which required more surgery.

Williams, 36, spent the first six weeks of her baby's life bedridden (Villarosa, 2018)."

Black women all over the country are experiencing neglect and unpreparedness from hospital staff and health care providers, similar to Serena Williams. Fortunately, there are solutions being created to better prepare medical staff, prevent pregnancy complications and eliminate maternal death for Black women and women of all races in the U.S.

### Maternal Mortality Risk Communication and Effective Solutions

Despite the vastly growing attention on the topic of maternal mortality, a maternal death is still the most extreme and the most rare negative maternal outcome ("Report from the Nine"). Reports have estimated that over 60% of pregnancy-related deaths that occurred in previous years could be prevented (Report from the Nine). This means that with the implementation of effective, actionable solutions maternal mortality rates can decrease significantly and prevention efforts can mitigate risk factors that lead to death. Across the country, many states are stepping up to the challenge of preventing maternal death. The state of California has been at the forefront of transforming maternal care with effective solutions. California's maternal death rate fell 55 percent from 2006 to 2013 as a result of implemented standardized hospital protocols, checklists, emergency obstetric carts, and drills in hospitals across the state ("California Maternal Quality Care Collaborative," n.d.; Montagene, 2018). North Carolina has also been a leader in transforming maternal health care, seeing groundbreaking declines in their state's Black-white maternal mortality gap. Doctors, nurses, and researchers there have attributed their success in

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

closing the state's Black-white maternal mortality gap to a population health management program, called "Pregnancy Medical Home", for low-income pregnant women (Belluz, 2017). Pregnant women who are considered high risk are then connected with a "pregnancy care manager," who helps them understand and adhere to steps needed to reduce her health risks (Belluz, 2017). The pregnancy care manager does everything from helping women get access to healthy food to finding housing for their children while she's visiting her doctor. Kate Berrien, the vice president of clinical programs at Community Care of North Carolina says that the primary goal of the program is pre-term birth prevention and that "by tackling women's health problems before she goes into labor, we mitigate her risks (Belluz, 2017)."

Digital health solutions created to address health issues such as maternal mortality are also becoming more and more necessary, as women find themselves taking a more active part in making decisions about their care (Meskó, Drobni, Bényei, Gergely, & Györffy, 2017). The generation of women presently at childbearing age has grown up on the use of technology and some researchers warn that if the public health sector does not work to properly integrate digital health into today's health care options, that it will soon come at the price of their health (Meskó, Drobni, Bényei, Gergely, & Györffy, 2017). One example of a digital solution aimed to prevent maternal mortality was created by Elsie Amoako, a health care researcher based in Canada. She created the maternal health app Mommy Monitor after learning that African, Caribbean and Latin American women in North America are about four times more likely to experience complications in childbirth. The maternal health app collects personal information from expectant mothers to predict and mitigate any risks, then creates a maternal care package, including a tailored list of resources to help women manage their pregnancies (Rose, 2018).

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

While this app is not currently available in the U.S., digital solutions like these may become the future of maternal health care.

While many statewide and digital solutions have proved to be successful in preventing maternal death, no single intervention is by itself sufficient to improve maternal health and decrease morbidity and mortality (Elmusharaf, Byrne, & O'Donovan, 2015). As scary as they can be, life-threatening complications from pregnancy and childbirth are rare and health experts are continuously working to understand how to best prevent maternal death (Princing, 2017). One critical point they must keep in mind is that bringing healthcare to communities, through community participation and community-based interventions, is crucial for universal access to healthcare and for improving maternal and neonatal health (Elmusharaf, Byrne, & O'Donovan, 2015). This includes risk communication interventions and messaging. According to Bernhardt (2004), “public health communication recognizes that for programs to be both ethical and effective, information from and about the intended audience should inform all stages of an intervention, including development, planning, and implementation, to ensure that the program reflects the audience’s ideas, needs, and values (p. 2051). A concerted effort to understand people’s perceptions, identify misinformation, and incorporate their needs for health information, is important because as Cole (1999) shares, the days of simply informing the public that a risk has been identified, telling people not to worry, and stating what was intended to do about it, have in most cases long gone. Today, the public are no longer passive consumers of information communicated by authorities in the field (McKechnie and Davies 1999). They demand a greater role in decision-making, especially when it comes to their health. (McKechnie and Davies 1999). In the continued work to prevent maternal mortality, ultimately, a comprehensive group of risk



## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

communications and interventions tailored to the needs of the women in their own communities is a powerful way to start.

### **Project Design**

This creative study is designed to gain insight into how Black women in Indiana best receive health information that is important to them, how health risks can be communicated in ways that are informative and relevant in their communities, and their prior knowledge of maternal mortality risks. All of these insights were used to inform the design of an digital health resource that shares maternal mortality, stress, and pregnancy information specific to Black women. In this creative project, data collection occurred in three phases. The first phase of this creative project was a user survey, the second phase was a focus group, and the third phase was participatory design. Data acquired in these phases informed all five steps of design thinking, which directly influenced every aspect of the health resource design.

### Survey Method

The purpose of the survey conducted in this study was to understand the participants' prior knowledge of pregnancy risks, maternal mortality, and stress related to maternal mortality. It also gave insight into the resources participants use to access information about these topics. A survey was a useful tool to gather this data because it allowed individuals to evaluate their own knowledge and share it anonymously. This method of data collection was key in identifying participants' preferred health information seeking process and needs for further education concerning pregnancy complications and maternal mortality. The user survey contained 31

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

questions regarding demographics, access to health resources, pregnancy information seeking behaviors, maternal mortality knowledge, and stress awareness related to health and pregnancy (See Appendix A). The survey featured both multiple choice and open response questions. It was distributed to participants via email and social media platforms Facebook and Twitter.

Participants who were contacted by email were identified through Ball State University's Black Faculty & Staff Association in Indiana or Ball State's Athletics. Those contacted in either of these groups met the study's inclusion criteria, discussed below, and represented a large age range of women who are currently residents in Indiana. By contacting these two groups I hoped to target a diverse group of Black women in life experience, age, and economic background.

Participants who were distributed the survey through social media were hoped to be current Indiana residents who may share differing socioeconomic status, age, life experiences, and education than those contacted by email. Participants who completed the survey were also asked to share their email address with the researcher to be contacted for further portions of this study (i.e. focus group, participatory design).

### Inclusion Criteria

Participants who identified as female, Black/African American, were between the ages of 18 and 45 year, and were Indiana residents were allowed to partake in this survey. Because this project aimed to design an educational health resource as a risk communication effort, we wanted to include women with differing maternal experiences (e.g. women who are pregnant, women with children, women who plan to become pregnant, and women without children) as to gain

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

well-rounded understanding of the populations wants, needs, and beliefs. Those who not did not meet this criteria were not qualified to complete this survey.

### Survey Participants

A total of 43 participants completed the survey, however 14 participants did not actually qualify for the study because of their location or their race. Those participants were excluded from the survey results. All qualifying participants (29) who completed the survey identified as female with the average age of participants being 24.24 years. Almost all participants were residents of Muncie, IN or Indianapolis, IN. Well over half of participants (82.75%) had some received some college education with 31.03% having either their bachelor's or master's degrees. None of the participants were pregnant, 17.24% of participants had one child or children and 75.86% of participants plan on having children in the future.

### Survey Results

The survey data was analyzed using the Reports function of Qualtrics Survey Software. While both qualitative data and quantitative data are important to this research, this results section will focus more heavily on the qualitative data. The survey results were divided in 4 core themes: information seeking regarding pregnancy, maternal mortality knowledge, and stress.

- Information-Seeking regarding Pregnancy

The first group of questions focused on where and how women seek or receive any pregnancy information. Very few women reported consistently seeking pregnancy information. But, when

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

they did seek pregnancy information their top three information sources were family, internet searches (Google, Bing, etc.), and friends. Most often when participants researched pregnancy information the topics they found most relevant were symptoms of pregnancy, birthing options, and expectations for future pregnancy. The main motivation behind searching for these pregnancy topics fell under two points: curiosity and concern for safety and preparedness.

Women want to have a comfortable level of pregnancy knowledge so that if they do become pregnant they feel ready for the experience. Sixty-one percent of all participants have researched pregnancy risks, which were defined as conditions, behaviors, or situations that may lead to complications during pregnancy. 58% of participants believed that information concerning pregnancy risks is easy to access, noting that the internet allows individuals to research almost any topic at their own will. Those few participants who disagreed with this notion cited that unless you are already very knowledgeable about your own personal pregnancy risks it will not be easy to find specific information to you.

Participants expressed receiving pregnancy information most often from the same three sources where they seek information: internet searches, family, and friends. Social media sites (Twitter and Instagram) were cited most often when participants were asked to share specific names of sources where they've received pregnancy information, despite social media not being any of the top three sources where they received pregnancy information. One participant shared that dialogue from Black women like Gabrielle Union (actress, activist) and Jamilah Lemieux (journalist, feminist) on social media is what has kept her attention on issues of reproductive health. Nearly every participant agreed that currently there is no website or media platform that currently shares pregnancy information specific to the needs of Black women in Indiana. This

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

suggests that more specific information about pregnancy and pregnancy risks for Black women are less readily available.

- Maternal Mortality Knowledge

Over 75% of participants shared that they were somewhat familiar or very familiar with the concept of maternal mortality. Women overwhelmingly received maternal mortality information from two sources: social media and internet searches. Twitter was the most cited social media site once again, making it the most popular source for receiving both pregnancy information and maternal mortality information. Women shared that they are not receiving maternal mortality information from their doctors or physicians who tend to be perceived as having the most authority over such topics. Prior to completing the survey, over half (59%) of participants cited that they knew Black women experience maternal mortality at higher rates than women of any other race in the United States. Social media seems to be informing a large community of Black women of this fact, however there were still about 40% of participants who were not aware that Black women face maternal mortality at higher rates. This demonstrates that social media alone is not enough to educate and inform Black women of their risks concerning maternal mortality.

- Stress

Participants expressed that work, money/finances, and relationships with family/spouses were their top three sources of negative stress. 90% of participants said that negative stress has affected their physical health with women experiencing a range of symptoms from fatigue to insomnia. The most experienced symptom associated with negative was headache. About 80% of

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

participants have never received information from their doctor/physician on the effect of stress experienced prior to or during pregnancy. Additionally, only one-third of participants were aware that Black people in the United States may experience faster aging due to exposure to stressors, which can negatively affect pregnancy. Similar to maternal mortality information, there is a need for education when it comes to the effects stress can have on the body and in turn, future pregnancy.

### Focus Group

The purpose of the focus group conducted in this study was to understand the processes and behaviors participants use to seek pregnancy information, how they perceive processes, and how they can be improved. The focus group also aimed to understand how participants' health experiences are shaped by their race and what can be done to improve that experience. Using a focus group as a method of data collection was also key in identifying what types of pregnancy and maternal mortality information should be included in the digital health resource (e.g. birthing stories, maternal mortality statistics, contraception options) and how that information should be represented (e.g. using culturally representative pictures, using layperson language). The discussion based nature of the focus group allowed participants to build on and add to each other's points while fostering meaningful discussion among themselves on topics they found important.

The focus group session took about ninety minutes. During the focus group, participants were given Post-It notes and Sharpie markers to write responses to prompts and questions

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

centered around gathering their thoughts, feelings, and beliefs about their own health experiences (See Appendix B). At the end of the session participants were given the opportunity to further discuss experiences or insights they wanted to share. The data collected from the focus groups was transcribed and analyzed by making an affinity diagram and open coding.

### Focus Group Participants

Participants were contacted for the focus group via email addresses acquired confidentially from the survey. Participants who did not volunteer to take part in the focus group through taking the survey were made aware of the focus group by word of mouth. Participants who identified as female, Black/African American, were between the ages of 18 and 45 year, and were Indiana residents were allowed to partake in this focus group. Those who not did not meet this criteria were not qualified to participate in the focus group. A total of 7 participants took part in the focus group. The average age of participants was 19.2 years and all participants were enrolled in a four year university.

### Focus Group Results

In analyzing the data from the participant focus group using affinity mapping and open coding, four major themes emerged (See Appendix D):

1. Seeking health information for myself is easy, but not always satisfying - I want to know more about maternal mortality.
2. When receiving health information, I like for it to be personal.
3. Visual representations of black women are important to me.
4. I perceive maternal mortality as a significant health issue for black women that is connected to stress and the social determinants of health.

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

- Seeking health information for myself is easy, but not always satisfying. I want to learn more about maternal mortality.

Participants expressed that seeking health information was fairly easy because as college students they had access to their campus health center and their main sources of health information (family, friends, internet) are readily available to them. However, these sources of health information do not always satisfy their health needs. For example, one participant stated that although she uses WebMD to quickly assess her health concerns there are instances where the popular health-site gives her “too many diagnoses” and the uncertainty experienced as a result of “cancer symptoms and flu symptoms being too similar” is not helpful. Other participants noted that information they obtain from internet searches and WebMD is often too general and would be helpful if it was more personalized.

Participants were aware of the general concept of maternal mortality as death due to pregnancy-related causes but posed questions about why it occurs, why it’s a problem, how to prevent it, and what is being done to change it. Their questions showed that in looking for maternal mortality information, they aren’t finding the answers to their questions. One participant noted that while maternal mortality information may not directly impact her current life choices, she may need to know more about it to plan for her future saying, “well like maybe like when I’m a little older and I would think I want have a child I would want to know like what options I have like where I live.” She posed questions about where maternal mortality is most common and if it’s common where she lives should she move somewhere else. These sentiments suggest that information on maternal mortality, its causes, and its prevention is desired and would at the least be helpful to women planning pregnancies in the future.



## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

- When seeking or receiving health information, I like for it to be personal.

Participants said that their health information processes, both seeking and receiving, could be made better with personalization. From their perspective, this includes being able to have an experience that makes them feel valued. One participant detailed her own positive experience with receiving health information saying, “[I got a] call from my doctor, like specifically, not just from the receptionist. I don’t want hear from the receptionist. Period.” Hearing directly from her doctor, whom she was familiar with, helped her to feel like her doctor cared about her as a human being and not just another patient. Another participant explained an opposing experience, where her care provider didn’t take into account her feelings or her individual needs saying, “like the fact that we’re athletes, like we have different problems because we are athletes or stuff like because we’re black or stuff like because we’re women. Like It’s just different. Yeah. And I feel like they don’t take that into consideration. Like you’re a human. Like they just treat you like a blanket.”

- Visual representations of black women are important to me.

When discussing a health resource being made specifically for Black womens needs, participants expressed most fervently that Black women need to be visibly present throughout the source in the form of pictures of Black women with diverse hair types, Black women with relatable stories, and Black women with diverse careers in the field. They also gave examples of how this type of representation is not common to them and is often found left out of resources like anatomy textbooks, which typically only display “white people's parts.” One participant, in detailing the emphasis on the diversity of curls explained that, “you need to see people that look like you.” To

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

the participants, seeing themselves represented in health resources is not this is not a merely a want, but a need.

- I perceive maternal mortality as a significant health issue for black women that is connected to stress and the social determinants of health.

Maternal mortality has many interrelated causes. When participants were asked what they thought put women at risk for maternal mortality, the majority of responses fell under two categories: stress or social determinants of health. One participants explained very bluntly that “stress can kill you.” Many other participants related stress to lack of social support.

Socioeconomic status was also referenced in most responses that didn’t include stress directly. Participants mentioned social determinants of health like income, insurance coverage, access to certain doctors, and lack of education all as things that could put a woman at higher risk for maternal mortality. One participant explained that from her perspective, “someone that has a low income doesn't have access to the same health care.” Social determinants such as discrimination and racism were also highlighted as issues that contribute to maternal mortality.

While no participants mentioned any of the leading causes of death for maternal mortality, they are clearly aware of the ways that their social and physical environments create barriers for women, especially black women, to get quality health care. In asking participants what words or feelings came to mind when they hear the word ‘risk,’ almost all participants reacted with negative thoughts or feelings. Some of those reactions were explained using the words such as frantic, problems, scary, stress, death, and uncertainty. In discussions amongst one another they focused mostly on risks involved in taking certain medicine or having a certain

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

medical procedures, not pregnancy or maternal mortality. But, this gives good insight into how the word risk itself is perceived. When explaining risk factors for maternal mortality, it is possible that the word risk itself has enough of a negative connotation to make women feel uncomfortable and deter them from feeling confident in their decision to engage or avoid a behavior or message. One participant mentioned that she'd be unsure of her decisions to participate in a certain behavior or health recommendation if she knew there was a risk associated "because if there's a risk you're always going to think about is there a better option?"

### Participatory Design Method

The purpose of participant prototyping sessions was to allow the participants to give feedback and collaborate with the researcher on the design of the health resource being created. Data from surveys, focus groups, and participatory design sessions were used to inform the final health resource design. The participatory design sessions took about 30 minutes. During these sessions participants were presented with prototypes of the digital platform. Each participants individually assessed the prototype by exploring the platform at their own will and indicating elements they like, dislike, elements that need adjusting, and elements that should be added or eliminated from the final design. Their feedback was recorded with written notes including their insights, notable quotes, and any patterns seen by the researcher. The participant feedback from the participatory design sessions helped to identify the best practices in the design of the platform and allow the student researcher to incorporate participant design ideas into the final design.

### Participants

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

Participants in this phase of the study were all Black women who attend a college or university. The 3 women who participated were recruited by word of mouth during the focus group portion of the study. The average age of the participants was 19 years.

### Participatory Design Results

A few themes emerged from the participatory design session:

Feedback:

1. Pictures throughout the platform represented Black women very well.
2. The platform was easy to read and understand.
3. The information provided was new and interesting.
4. I would use the platform to learn more about maternal health.

- Black women were well represented throughout the platform.

Upon opening the platform, the first element each participant noticed was the silhouette of three black women with different skin tones and hair styles. It was also the first thing that each participant noted that they liked, along with the diverse pictures of Black women throughout the platform. Another participant liked that fact that the ‘B’ in Black women is capitalized throughout the platform because “when things are capitalized they’re important and it’s important to me.”

- The platform was easy to read and understand.

Each participant navigated through the platform, reading each page, without any usability questions. They knew where to find information, where to click to get to a new page, and where to scroll. One participants explained that “the tabs were good and easy to navigate and there isn’t

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

too much information on each tab/page.” Another participant mentioned that the platform looks “professional,” and “it’s easy to read.” She liked the graphs that showed the maternal mortality statistics because she said some people, like herself, learn better with pictures.

- The information provided in the platform was new and interesting. I would use this for myself.

As each participant read through the platform, they liked that there was a news section for them to learn more about maternal mortality at their own pace. One participant liked the clarity of the content included on the platform such as the actual definition of maternal mortality because it gave her more detail than she had before. Each participant liked that there were other states included in the solutions section. One participant said she found it interesting as well because she “didn’t know that [information] and I’m about to move [to a different state].” Lastly, each participant said that they would use this platform for themselves to learn about maternal health. One participant even asked if the news section of the platform would be updated.

### **Black Maternal Health: Indiana**

The platform Black Maternal Health: Indiana was designed using the data gathered in this study. The main focus of that platform is educating women about maternal mortality in Indiana and how Black women face unique risks for pregnancy-related death. Participants gave very pointed insight on how to incorporate their particular health needs, concerns as Black women, and desire to learn about issues in their own community into one resource. The platform was

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

named “Black Maternal Health: Indiana” to give women a very clear picture of the information the platform shares and the platform’s intended audience.

### Summary of Insights from Research

Data from the survey showed that Black women in Indiana most often use digital or online resources to research health topics of their interest. It also showed that women are not receiving maternal mortality information from their care providers, not all Black women are aware that they experience maternal mortality at higher rates than women of other races, and that Black women are invested in learning more about pregnancy so they can be prepared for that stage of their lives. Data from the focus group showed that Black women value visual representations of women who look like them, prefer personal health experiences over impersonal blanket care services, and understand maternal mortality as a concept but not in much detail.

### From Research Insights to Design

The summaries of insights realized throughout the study were incorporated in every step of the design process. The design was made to be simple - easy to navigate and easy to understand as to not create more barriers in accessing the information the platform provides. Photos of Black women were included throughout the platform to ensure that women felt represented. The color purple was used as the main colorway because it is associated with power and royalty. For this platform purple emphasizes the importance of the audience, Black women, and to show them they’re respected. Each page of the platform shares information discussed in

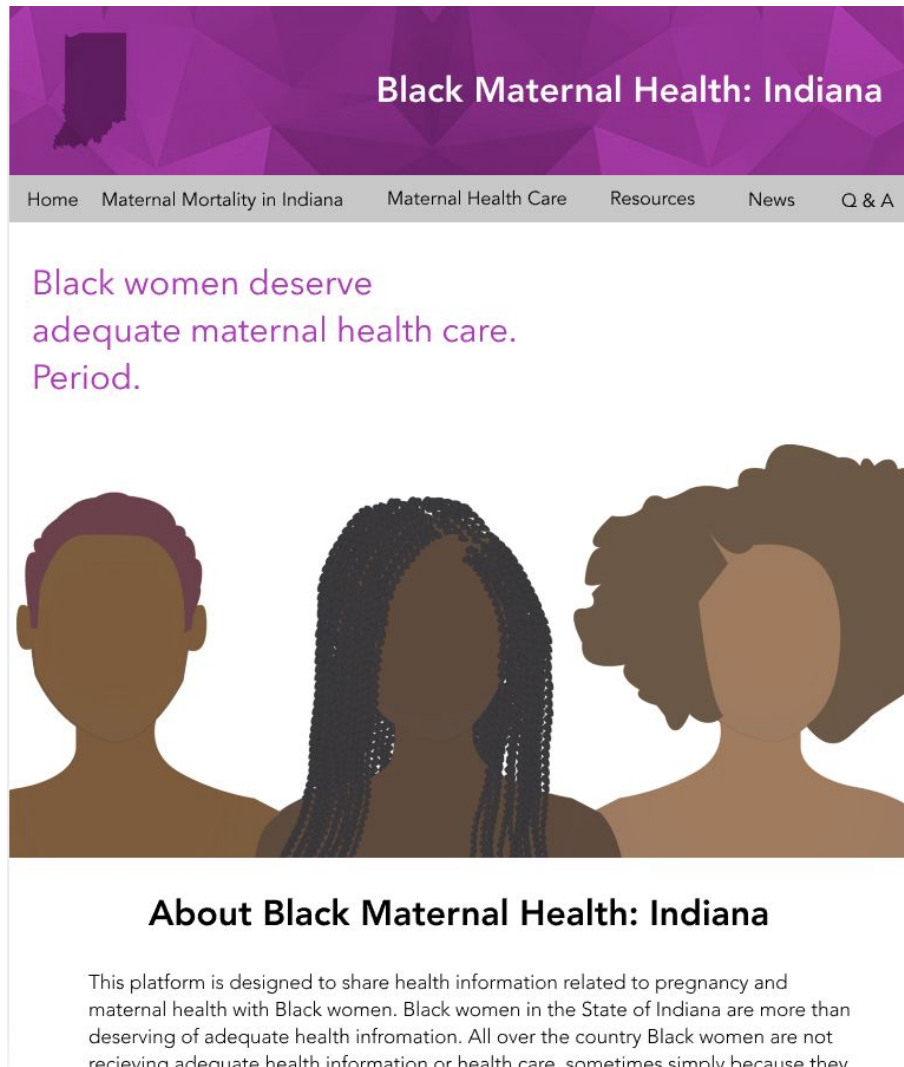
## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

focus groups and surveys such as the need for maternal mortality statistics specifically for Black women or the ability to ask an expert personal pregnancy questions. Altogether, the platform took insights directly from the audience that allowed for it to be culturally relevant and directly useful to the women who informed its design.

The platform can be viewed using the following link:

<https://projects.invisionapp.com/prototype/cjtkbxddw00eej701nsyp7x5x/play>

Platform designs may also be viewed in Appendix D.



### Discussion

There are many websites, series', and articles that share similar information to the maternal mortality and pregnancy information shared in the Black Maternal Health: Indiana Platform. But, what Black Maternal Health: Indiana accomplishes moves beyond helpful infographics and stories. This platform designed in this project is one of the only resources that discusses maternal mortality in Indiana that included community participation at every step of its



## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

creation. It shares credible information for a specific audience and speaks directly to the women it is serving, something that other resources may miss by focusing on a larger audience. Black women who participated in the study reiterated constantly that regardless of the information shared, the platforms or resources created for them had to feel personal and show that their lives are valued. The platform designed in this study incorporated those necessary components through visual representations of Black women, conversational and transparent tones, and simple design.

One single digital maternal mortality platform is not going to save all Black mothers from dying from pregnancy-related causes. But, it does give Black women the facts. It gives Black women the ability to understand the risks they face. It gives Black women the opportunity to learn how maternal mortality affects women like them all over the country. And it gives Black women the full reality of the situation, while reminding them that there are people in their communities that care and are working to help them. Health is so reliant on personal beliefs and perceptions. Maternal health care resources that make women feel comfortable enough to learn more, ask questions, and take steps to protect themselves could be the difference between life and death in many situations. Platforms like the one designed in this study could be a part of the future of personalized health care, where patients are given resources and advice that can be directly applied in their families and communities.

One limitation of this study was that the average age of participants was under 25 years. The needs of Black women at age 20 and age 33 may be different. In the future, I would want to do a better job of incorporating women in their late 20s and 30s because their perspective may give new dimension to project design and educational elements that need to be included.

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

Another limitation was that more than 80% of participants were college educated. While this platform and its concept seemed to resonate well with participants, it may not accurately represent the experiences of women who haven't received a college education. Potentially, these limitations could restrict the reach of the platform and miss a community of women who may need it most. Moreover, simply the number of participants was a limitation in this study. While those who participated in the study provided fascinating insights, there may not have been enough participants with diverse socioeconomic backgrounds to make strong assumptions about the needs of all women Indiana.

Further studies of this nature may want to continue research on tailoring risk communication and health education efforts to specific communities. This creative project focused specifically on women in Indiana and gives a strong example of how valuable designing risk communication and health education resources for specific communities are for ensuring that the information they share resonates with the audience. However, one resource meant to serve the entire Black population of Indiana is not enough. Spending serious time and effort to understand the systems these women use, their day-to-day lives, and the barriers to care they face would make a project like this even more relevant. Giving even more pointed instruction, resources, and care options in specific cities or counties may have a considerably positive effect on the maternal health of Black women in those places.

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### Appendix A. Participant Survey Questions

#### Demographic Information

What is your age? \_\_\_\_\_

Where do you live? Please list your city and state: \_\_\_\_\_

What is your sex?

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

Male	Female	Transgender (Male to Female)	Transgender (Female to Male)
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Do you consider yourself any of the following races? If yes, please choose all that apply.

Black/African American	White/Caucasian	Hispanic or Latino	Asian/ Pacific Islander	Native American or American Indian
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What's the highest level of education you've completed?

PhD	MA	BS/BA	Some college	High School Diploma	GED	N/A
-----	----	-------	-----------------	------------------------	-----	-----

Are you pregnant?

Yes	No
-----	----

Do you have a child or children?

Yes	No
-----	----

If you are not pregnant or do not have children, do you plan to have children in the future?

Yes	No
-----	----

### Access to Resources/Information Seeking Behaviors

1.How often do you seek information about pregnancy? Please circle your answer. **If you circle “Never,” please skip to question 5.**

Very Frequently	Frequently	Occasionally	Rarely	Very Rarely	Never
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## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

2. Where do you seek information about pregnancy? Please circle all that apply.

Social Media
Books
Blogs
Internet Search (Google, Bing, etc)
Print Magazines
Friends
Family
Physicians
Other (Please list below)

Other: \_\_\_\_\_

2a. Please list specific social media platforms, book titles, blog titles, magazine titles, etc based on the resources you selected above.

3. Please rank the following resources from 1 to 10 based on how helpful they are to you when seeking pregnancy information (1 being the most helpful, 10 being least helpful).

Social Media
Books



## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

Blogs
Internet Search (Google, Bing, etc)
Print Magazines
Friends
Family
Physicians
Other (Please list below)

Other: \_\_\_\_\_

4. What pregnancy topics do you research most often? Please list them below.

4.a Why do you research these specific topics?

Have you ever researched information about the risks of pregnancy? (*Pregnancy risks can be defined as conditions, behaviors, or situations that may lead to complications during pregnancy*)

Yes	No
-----	----

5. Do you feel information about pregnancy risks are easy to access? Please circle your answer.

Yes	No	Not sure
-----	----	----------

5a. Please explain why or why not?

6. When you receive pregnancy information, where does it come from? Please circle all that apply.

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

Social Media
Books
Blogs
Internet Search (Google, Bing, etc)
Print Magazines
Friends
Family
Physicians
Other (Please list below)

Other: \_\_\_\_\_

6.a Please list specific social media platforms, book titles, blog titles, magazine titles, etc based on the resources you selected above.

7. To your current knowledge, is there is a website or media platform that currently shares pregnancy information specific to Black women in Indiana? Please circle your answer. (***A media platform is any website, digital environment or social media site that shares information, allows for discussion or feedback.***)

Yes	No
-----	----

7a. If yes, please list the website/platform(s) below.

### **Risk Knowledge/Awareness**

#### Maternal Mortality & Stress

7. Are you familiar with the concept of *maternal mortality (death due to pregnancy or delivery complications)*? Please circle your answer.

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

Very familiar	Somewhat familiar	Neutral	Not very familiar	Not at all familiar
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8. Where have you received information regarding maternal mortality? Please circle all that apply. If you have never received any information on this topic, please this using the 'other' option.

Social Media
Books
Blogs
Internet Search (Google, Bing, etc)
Print Magazines
Friends
Family
Physicians
Other (Please list below)

Other: \_\_\_\_\_

8.a In the open space, please list specific social media platforms, book titles, blog titles, magazine titles, etc based

8.b What messages about maternal mortality have been most memorable to you?.

9. Have you ever received information about maternal mortality from your doctor or physician? Please circle your answer.

Yes	No
-----	----

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

9.a If yes, please explain how? (verbally, pamphlet, etc.)

10. Before taking this survey, were you aware that Black women experience maternal mortality at higher rates than women of any other race in the United States? Please circle your answer.

Yes	No
-----	----

### Distress (Negative Stress)

11. What are your top 3 sources of negative stress?

1.
2.
3.

11a. Has the negative stress you've experienced ever affected your physical health?

Yes	No
-----	----

11b. If you answered yes to the previous question, please explain how your physical health was affected by stress. Please circle all that apply

Nervousness, ringing in the ear
Chest pains/rapid heartbeat

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

Insomnia
Frequent colds/infections
Fatigue
Headaches
Digestive problems
Aches/pains/tense muscles
Loss of sexual desire
Diarrhea/constipation

Other: \_\_\_\_\_

12. Have you ever received information on the effects of experienced stress prior to or during pregnancy from your doctor/physician? Please circle your answer.

Yes	No
-----	----

12a. If yes, please explain how? (verbally, pamphlet, etc.)

13. Stress can have profound negative effects on health. Before taking this survey, were you aware that US Blacks may experience faster aging due to repeated exposure to stressors, which can negatively affect pregnancy? Please circle your answer.

Yes	No
-----	----

14. If you would like to be contacted to participate in the focus group portion of this study, please leave your email address below.

## **Appendix B. Focus Group Questions**

### Focus Group Session Prompt 1 - Saturate and Group (35 Mins)

#### Prompt Questions

- Think of a time when you've sought health information for yourself. Describe that process.
  - How can it be improved?
- Think of the best information you have ever received about your health. How was that information communicated to you?
  - How can it be improved?
- When you think of a health resource made specifically for black women, what characteristics should be included for it to be successful? (language, pictures, colors, depth, cultural?)
  - What characteristics should be avoided?

### Focus Group Session Prompt 2 - Saturate and Group (35 mins)

#### Prompt Questions

- What do you think puts you at risk from maternal mortality?
  - When you hear the word 'Risk' what other words or feelings come to mind?
- If someone is explaining risks concerning your health, how do you determine the seriousness of those risks?
- Have you changed your behavior based on something you learned about pregnancy risks?
  - How have you changed?
- Have you/ or someone you are close to you experienced negative stress related to your Blackness?
  - What coping mechanisms do you use to manage this stress?
- What would you like to learn/know about maternal mortality?

## **Appendix C. Focus Group Affinity Diagram**

# USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY

## Afiinity Diagram: Themes from Focus Group Data

**Seeking health information for myself is easy, but not always satisfying. I want to learn more about maternal mortality.**

Google search
Web Md
Family
Friends
Parents
BSU Health center. That was my go too last year
Too many diagnoses. Cancer and flu symptom are the same.
information on the internet is not always really specific to you.
[I learn about certain health topics] in health courses, but not a lot of info
my mental health, it was an easy process but not easy to talk to (the therapist bc I don't think she could relate)
I don't think they (BSU student health center) want to help me they just want to get me in and out and I don't like it.
why is it happening?
Does anybody even care?
Is it like more common in certain areas?
like you said Indiana has twice the rate so do I need to live somewhere else?
Well like maybe like when I'm a little older and I would think I wouldn't have a child I would want to know like what options I have like where I live.
Is anything being done to change it?

**When receiving health information, I like for it to be personal**

Emailing my gynecologist through a portal. I like emailing her because I don't have to call and she responds pretty quick and I can ask stupid stuff.
take test by yourself - seeing results with your own eyes
mental health info from therapist face-to-face
I put call from my doctor, like specifically, not just from the receptionist. I don't want hear from the receptionist. Period.
Like the fact that we're athletes, like we have different problems because we are athletes or stuff like because we're black or stuff like because we're women. Like it's just different. Yeah. And I feel like they don't take that into consideration. Like you're a human. Like they just treat you like a blanket.

**Visual representations of black women are important to me.**

More diverse pictures on websites.
Curls
Visual representations of black women.
4b, 4c, 3b, 3a [diverse hair types]
Pictures of black women on the site
Women Doctors, black women doctors.
Visual representations of black women.
Representation in the field (not just nurses)
You need to see people that look like you.
Include black people (aka women) with relatable problems in advertisements. Don't include no uncle toms.
pictures in textbooks and I'm not even talking about like the actual vagina. But like they just show white people's parts.

**I perceive maternal mortality as a significant health issue for Black women that is connected to stress and social determinants of health.**

income/ healthcare
insurance coverage
no one around you to support you
working too many hours
hospitals that don't respect black women
not having enough info on a subject bc of your environment
Stress can kill you.
Someone that has a low income doesn't have access to the same health care
Like they give you information but not enough. Or Just like detail like this patient specifically, like it's not personable. Like they'll treat every pregnancy the same. I'm talking about wealth but Serena Williams went through the same thing and she got money, and fame, and going to the best doctors. Just certain hospitals and doctors.

**The word risk is almost exclusively associated with negativity.**

Stress
Scary
uncertainty
injury
death
nervous
injury
death
nervous

**Appendix D. Prototype Designs - Black Maternal Health: Indiana**







# Black Maternal Health: Indiana

HomeMaternal Mortality in IndianaMaternal Health CareResourcesNewsQ & A

## About Black Maternal Health: Indiana

This platform is designed to share health information related to pregnancy and maternal health with Black women. Black women in the State of Indiana are more than deserving of adequate health information. All over the country Black women are not receiving adequate health information or health care, sometimes simply because they are Black. Because of this, women are at greater risk for many diseases and complications. One of them is maternal mortality or pregnancy-related death. Black women deserve better.

This platform hopes to supplement the information Black women do receive and fill gaps where they don't. It aims to help Black women understand maternal mortality and how it affects them. Lastly, it encourages Black women to take learning about their health into their own hands. If nobody has us, we got us.


### Black women in Indiana: A Trusted Source of Information

This platform prides itself on providing Black women with accurate, credible information from the following sources and more:



SIDE EFFECTS IS A HEALTH NEWS INITIATIVE  
LED BY WFYI PUBLIC MEDIA.






# Black Maternal Health: Indiana

[Home](#) [Maternal Mortality in Indiana](#) [Maternal Health Care](#) [Resources](#) [News](#) [Q & A](#)

## About the Designer



Hi! My name is Alexis Jimson-Miller. I designed Black Maternal Health: Indiana during my Master's education at Ball State University. I've always been passionate about my own personal health. When I learned about maternal mortality and how it disproportionately affects women like me, I realized it was my duty to help women understand why this is happening and what can be done to change it. Education isn't the only answer, however, I want Black women to be as knowledgeable as possible so they can make the best decisions for themselves. We deserve this opportunity. If you are interested in learning more about this project, please contact me using the email address below!

Education:  
Miami University, B.A. Public Health '17  
Ball State University, M.A. Emerging Media Design & Development '19

Contact:  
[amjimsonmill@bsu.edu](mailto:amjimsonmill@bsu.edu)

## Contact Us

Name\*

Email\*

Institution

Message



# Maternal Mortality In Indiana

HomeMaternal Mortality in IndianaMaternal Health CareResourcesNewsQ & A

Topics

What is maternal mortality?

Maternal Mortality Statistics

Why are women dying?

How can we save more moms?

## What is Maternal Mortality?

Maternal mortality is the measure of the number of women who die due to pregnancy-related causes during or after birth. Below are a few maternal mortality definitions given by health organizations in the United States. America's Health Rankings defines maternal mortality as:

"[The] number of deaths from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, per 100,000 births."






### **Maternal Health Care in Indiana: Discussions and Solutions**

According to the World Health Organization, Maternal health refers to the health of women during pregnancy, childbirth and the postpartum period. Women in Indiana need to be aware of the care they need to be healthy mothers that have healthy babies. This includes but is not limited to pre-natal care, birthing options, infant care, post partum care, and access to adequate health care providers and facilities. This page shares information about these maternal health care topics to empower women and let them know they deserve the best care possible.

### **Happier Birth Days**

Starting in December 2018, Side Effects Public Media, the Indianapolis Recorder and the Indiana Minority Health Coalition hosted conversations on how maternal and infant mortality disproportionately impacts communities of color in Indiana. The panel discussion, Happier Birth Days, was split into two parts. Part 1 focused on pregnancy and issues related to delivery.





## News

[Home](#) [Maternal Mortality in Indiana](#) [Maternal Health Care](#) [Resources](#) [News](#) [Q & A](#)

### Topics

Indiana News


U.S. News

### Maternal Mortality & Maternal Health News: Indiana

In Indiana, Side Effects Public Media has been a leader in sharing news stories related to maternal mortality and maternal health. As health news initiative, they explore the impacts of place, policy and economics on America's health. Their reporting sheds light on root causes of community-wide health problems—from chronic disease, to mental health and addiction, to infant mortality—and on new efforts to solve them. They are headquartered at WFYI Public Media in Indianapolis. See their stories below.

## Why New Mothers In Indiana Are Dying At One Of The Nation's Highest Rates

By LAUREN BAVIS • JUN 13, 2018




LAUREN BAVIS / SIDE EFFECTS PUBLIC MEDIA

Courtney Reimlinger was breastfeeding her week-old son last year when she felt a pain in her chest.

The pain was excruciating, the 23-year-old Indianapolis native remembers, much worse than the 10 hours in labor she'd spent a week before. It spread up her neck and into her head, and soon she was slipping in and out of consciousness.


## How Does Postpartum Care Affect Infant And Maternal Health In Indiana's Black Communities?

By EDITOR • JAN 8, 2019




On Tuesday, a panel of experts tackled the subject of maternal and infant mortality -- and the unequal burden on African-

## USING DESIGN THINKING TO EXPLORE STRESS AND MATERNAL MORTALITY




# Resources

Home Maternal Mortality in Indiana Maternal Health Care Resources News Q & A



### Resources for Pregnant Moms

This resource page features infographics, hotlines, activities, and checklists all dedicated to providing women with the tools they need to get the care they need.



*The key to a healthy baby and a happy mom*

The Indiana State Department of Health (IDOH) Maternal and Child Health (MCH) Division is excited to announce the official launch of the MCH MOMS Helpline!

The MOMS Helpline is committed to improving pregnant women's access to early and regular prenatal care and connecting them with a network of prenatal and child health care services within their local communities, state agencies and other organizations around Indiana.

#### MCH MOMS Help Line

This helpline is operated by the Indiana State Department of Health Maternal Child Health Division. The goal of the help line is to reduce infant mortality and educate and advocate on behalf of moms and pregnant women in Indiana.

Helpline: 1-844-MCH-MOMS  
(844-624-6667)



### About Black Women in Indiana Q&A Chats

Black Women in Indiana holds one question and answer (Q&A) chat with a qualified Black health professional each month. The purpose of the chat is to empower Black women to ask questions they have about their health and explore health topics that may be overlooked in situations like a regular doctor's visit.

The chat will feature Black health professionals across the state of Indiana to shine a light on the hard-working, knowledgeable men and women in our communities. We will explore a new topic each month encourage you to tune in to our live chat and ask any question you'd like. You can submit your questions below or during the chat. Chat details will be updated each month!

What are you waiting for? Ask away!

### This Month's Q&A Guest: Alexis Jimson-Miller



Topic: Prenatal Care in Muncie Indiana

About the Guest: Alexis is a Ball State University (Muncie, IN) student in the Emerging Media Design & Development Master's Program. As a Muncie resident she has some unique perspective on Prenatal care in the city.

Chat Details: Her chat will be held April 8th, 2019 at 8:00 pm EST on Facebook Live. Click [here](#) to see it live!